Circle A G was illuminated, and the Circle *b h* with the ſame ſort by which the correſponding Circle B H was illuminated, and the reſt of the Circles *c i*, *d k*, *e l*, *f m* reſpectively, with the ſame ſorts of Rays by which the ſeveral correſponding Circles C J, D K, E L, F M were illuminated. In the Figure P T compoſed of the greater Circles, three of thoſe Circles A G, B H, C J, are ſo expanded into one another, that the three ſorts of Rays by which thoſe Circles are illuminated, together with other innumerable ſorts of intermediate Rays, are mixed at Q R in the middle of the Circle B H. And the like mixture happens throughout almoſt the whole length of the Figure P T. But in the Figure *p t* compoſed of the leſs Circles, the three leſs Circles *a g*, *b h*, *c i*, which anſwer to thoſe three greater, do not extend into one another; nor are there any where mingled ſo much as any two of the three ſorts of Rays by which thoſe Circles are illuminated, and which in the Figure P T are all of them intermingled at B H.

Now he that ſhall thus conſider it, will eaſily underſtand that the mixture is diminiſhed in the ſame Proportion with the Diameters of the Circles. If the Diameters of the Circles whilſt their Centers remain the ſame, be made three times leſs than before, the mixture will be alſo three times leſs; if ten times leſs, the mixture will be ten times leſs, and ſo of other Proportions. That is, the mixture of the Rays in the greater Figure P T will be to their mixture in the leſs *p t*, as the Latitude of the greater Figure is to the Latitude of the leſs. For the Latitudes of theſe Figures are equal to the Diameters of their Circles. And hence it eaſily follows, that the mixture of the Rays in the refracted Spectrum *p t* is to the mixture of the Rays in the direct and immediate Light of the Sun, as the breadth of that Spectrum is to the difference between the length and breadth of the ſame Spectrum. So

So then, if we would diminiſh the mixture of the Rays, we are to diminiſh the Diameters of the Circles. Now theſe would be diminiſhed if the Sun's Diameter to which they anſwer could be made leſs than it is, or (which comes to the ſame purpoſe) if without Doors, at a great diſtance from the Priſm towards the Sun, ſome opake body were placed, with a round hole in the middle of it, to intercept all the Sun's Light, excepting ſo much as coming from the middle of his Body could paſs through that hole to the Priſm. For ſo the Circles A G, B H and the reſt, would not any longer anſwer to the whole Diſque of the Sun, but only to that part of it which could be ſeen from the Priſm through that hole, that is to the apparent magnitude of that hole viewed from the Priſm. But that theſe Circles may anſwer more diſtinctly to that hole a Lens is to be placed by the Priſm to caſt the Image of the hole, (that is, every one of the Circles A G, B H, *&c.*) diſtinctly upon the Paper at P T, after ſuch a manner as by a Lens placed at a Window the Species of Objects abroad are caſt diſtinctly upon a Paper within the Room, and the Rectilinear Sides of the oblong ſolar Image in the fifth Experiment became diſtinct without any Penumbra. If this be done it will not be neceſſary to place that hole very far off, no not beyond the Window. And therefore inſtead of that hole, I uſed the hole in the Window-ſhut as follows.

Exper. 11. In the Sun's Light let into my darkned Chamber through a ſmall round hole in my Window-ſhut, at about 10 or 12 Feet from the Window, I placed a Lens, by which the Image of the hole might be diſtinctly caſt upon a ſheet of white Paper, placed at the diſtance of ſix, eight, ten or twelve Feet from the Lens. For according to the difference of the Lenſes I uſed various diſtances,